Air conditioning and **R**efrigeration **E**uropean **A**ssociation

AREA is the European Federation of National Refrigeration and Air Conditioning Associations. Established in 1988, AREA represents the industry of refrigeration, air conditioning and heat pump installation, in particular at the level of the European Institutions.

The associations which are members of AREA, represent, in their own country, the enterprises responsible for the design, installation, maintenance and repair of refrigeration and air conditioning equipment in the various applications.

Today AREA comprises the associations of the following countries : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany (2), Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Slovakia, Spain, Sweden, Turkey and United Kingdom (2).

Harmonisation of EU refrigeration training and certification becomes a reality

Fluorinated gases are still the best refrigerants in many applications (e.g. commercial refrigeration and air conditioning) because HFC-based technologies still provide superior energy efficiencies than available alternatives, besides their merits in safety and the zero effect on ozone depletion. Indeed only life cycle metrics such as the Life Cycle Climate Performance LCCP or the Total Equivalent Warming Impact TEWI are found to properly quantify the overall climate change impact (energy related emissions from the use of refrigerants in refrigeration and air conditioning equipment, including heat pump and reversible air-conditioning systems, account for an average of 84 % of the total).
However HFC should only be applied where their use is justified and where emissions can be controlled by competent personnel. Toxic refrigerants (e.g. ammonia), high pressure CO^2 and flammable fluids are options to be used or further developed for applications offering energy efficient, safety and commercially viable ways, reinforcing the need for highly qualified personnel and responsible installation and service companies.

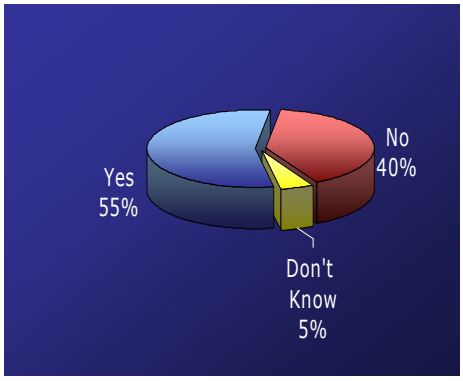
Well designed installations remain at their optimum energy efficiency level only if they are adequately controlled and maintained. Likewise there is no effective containment without proper qualification of the personnel handling the refrigerants.

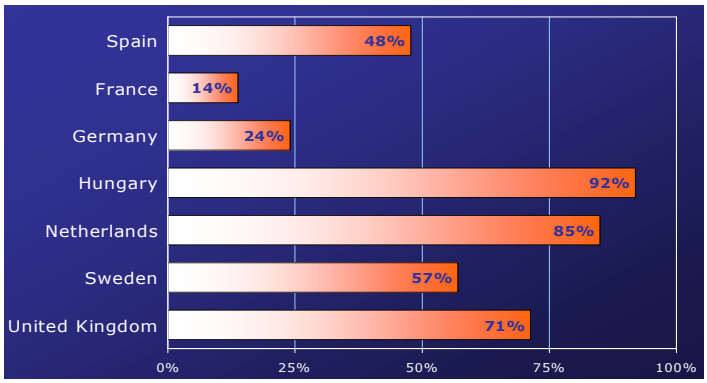
There is a need for harmonized quality education, training and certification in the refrigeration industry. Important differences in the educational schemes do exist between European countries. Advanced countries do not want to accept craftsmen from other Member States with insufficient competence. Some countries, sometimes among those called the more

developed ones, have no valid certification system. This cannot be a long lasting situation while building up an operational European Union where the concept of mutual recognition will now be applied by law. The educational programmes have to follow fast technological changes and to monitor an increasing number of changing rules, environmental legislations and European norms. The vast majority of the refrigeration and air conditioning installation companies are SME. As the issues to be dealt with, are global issues, the questions of minimum levels of professional qualification and of essential certification criteria have to be addressed with the European Authorities.

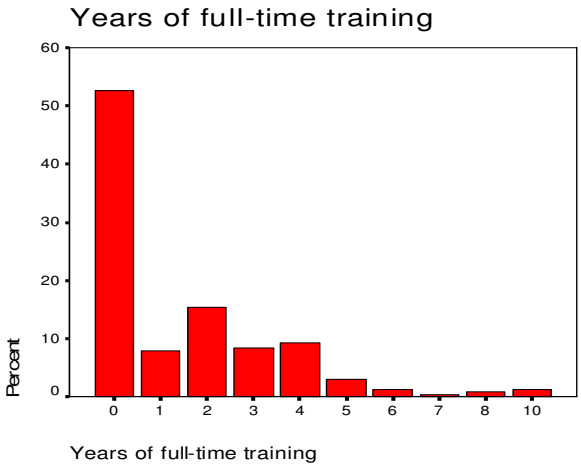
Results of a 2004 survey (347 refrigeration craftsmen interviewed in 7 representative European countries) : "Do you have an environmental certificate as an air conditioning / refrigeration engineer?

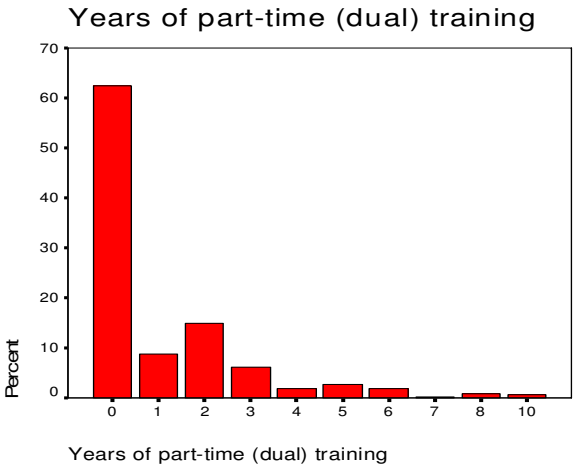
% Yes answers per country :





and on questions about training programmes :





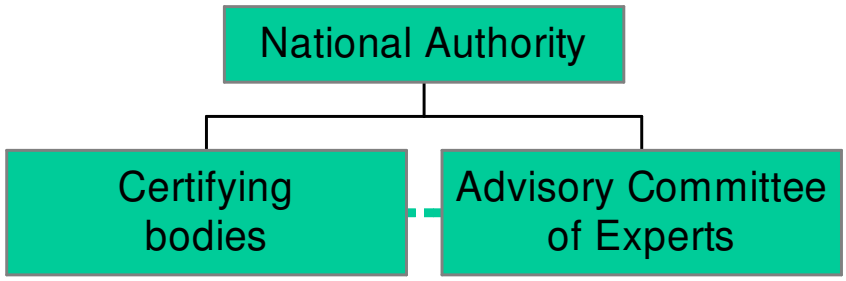
The European Commission has hired the consultants ICF to assist in the evaluation of measures taken by the Member States regarding the minimum qualifications requirements and programmes for RAC personnel pursuant to ODS Regulation EC N° 2037/2000 which already addressed the above mentioned issues. Their report stated in January 2005 that very few Member States complied with the recommendations regarding minimum personnel

qualifications / programmes. The reason for the limited response of the Member States seems to be that the ODS Regulation was not precise nor demanding enough.

AREA has been an active participant in the European Climate Change Programme ECCP I and has obtained a more complete wording of the article 5 - Training and Certification - of the F-gas Regulation that has been published on June 14, 2006.
This time, compulsory "minimum requirements and conditions for mutual recognition shall be established by the Commission in the scope of the Regulation on fluorinated greenhouse gases, in respect of training programmes and certification for both the companies and the relevant personnel involved in installation, maintenance or servicing of stationary refrigeration, air conditioning and heat pump equipment and circuits, as well as for the personnel involved in inspection and recovery activities".
AREA has obtained that not only refrigeration technicians but also their employers must be certified. The certification of the companies is absolutely needed to guarantee the technical expertise of the management, its concern for environmental protection, the necessary related work procedures and the availability of adequate tooling.

Recommendations for the requirements and conditions for mutual recognition to be established in the EC Regulation on certain fluorinated greenhouse gases (applicable to ODS substances also)

General structure in the Member States



The National Authority is the governmental institution, for instance a Ministry or a National Agency, responsible for controlling the implementation of the overall scheme.
The scheme includes a Certifying Body or Certifying Bodies carrying out the functions of assessment and certification / registration of companies' working procedures and structure : the National Authority has to recognize the competence of such a Body in accordance with standard EN 45012.
The scheme also includes a Certifying Body or Certifying Bodies operating systems of certification of personnel : the National Authority has to recognize the competence of such a Body in accordance with standard EN 45013 / ISO 17024.
The Certification Bodies must have experience within the refrigeration sector and employ specialists in refrigeration and air conditioning.
The Advisory Committee of Experts assists the National Authority in its controlling mission and serves as a counselor to define and update – when necessary – the criteria for certification (e.g. demands and terms of examinations, structures and terms of inspections, …). The members of the Advisory Committee are experienced representatives of the government, refrigeration vocational education bodies / schools and relevant trade associations (industry and end users).

Requirements for the Certification of Personnel

Persons, who are responsible for installation, inspection, testing, operation, maintenance, repair, disposal and assessment of refrigerating systems and their parts shall have the necessary training and knowledge for their task to achieve competence. Competence in each task shall be required for health, safety, environmental protection and energy conservation purposes.
The normative references are the standards EN 378-1/2/3/4 and EN 13313.
These persons responsible for guaranteeing the maximum containment of the systems, must be capable of:

- making leak tight joints using brazing, silver soldering and flare joint methods;
- identifying potential leakage points in a system;
- using direct acting leak detection methods;
- recovering refrigerant;
- evacuating systems or part of them;
- pressure testing;
- commissioning new systems / re-commissioning repaired systems.

Proof of proficiency in the above must be tested by examination or assessment before certification.

Requirements for the Certification of Companies

A company seeking certification has to fulfill the following requirements :

- it has to comply with the National legislation and administrative procedures;
- it has to have at least one person with a valid certificate assessing the competence corresponding to the activities carried out;
- it has the necessary equipment and tools to ensure in particular the safe handling of refrigerants (refrigerant recovery equipment, gauges, reference gauges, vacuum equipment, leak detection equipment);
- it has the necessary refrigerant administration and documentation system;
- it has the necessary work procedures (leakage control, recovery, log books of equipment serviced, …).

The certification provides formal recognition to the competence of the companies; a company is certified as long as it can demonstrate that its competence is maintained.
After a certificate has been issued, the Certifying Body must control the company regularly, so that the certificate can be renewed year after year, after a successful visit and report of the Certifying Body's inspector. The surveillance will concentrate on competence of personnel, inspection of equipment, equipment calibrating, review of management system and relevant documentation, compliance with the work procedures.
When the Certifying Body refuses to renew the certification after the surveillance, the company concerned has to file a new application.

In summary : no effective containment nor optimum energy efficient installations without properly qualified personnel and adequate certification schemes.

Robert H. Berckmans
Past Secretary General